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**AMENDMENTS TO THE CLAIMS:**

Please amend the claims as follows. This listing of claims will replace all prior listings.

1. (CURRENTLY AMENDED) An active vibration control system comprising:
  - a first shaft defined along a first axis;
  - a first gear mounted to said first shaft;
  - ~~an input shaft engaged with said first gear;~~
  - a second gear mounted to said first shaft;
  - a first mass mounted to said second gear;
  - a third gear mounted to said first shaft;
  - a second mass mounted to said third gear;
  - a fourth gear engaged with said second gear and said third gear such that said third gear and said second gear counter-rotate; and
  - a first differential assembly engaged with said first gear and said second gear to selectively adjust rotation of said first mass and said second mass relative said first gear to generate a first vibratory force output.
2. (ORIGINAL) The active vibration control system as recited in claim 1, further comprising:
  - a fifth gear mounted to said first shaft;
  - a sixth gear mounted to said first shaft;
  - a third mass mounted to said sixth gear;
  - a seventh gear mounted to said first shaft;
  - a fourth mass mounted to said seventh gear;
  - an eight gear engaged with said sixth gear and said seventh gear such that said sixth gear and said seventh gear counter-rotate; and
  - a second differential assembly engaged with said fifth gear and said sixth gear to selectively adjust rotation of said third mass and said fourth mass relative said fifth gear to generate a second vibratory force output.

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3. (ORIGINAL) The active vibration control system as recited in claim 1, wherein said differential assembly comprises:

- a second shaft mounted perpendicular to said first shaft;
- a differential gear mounted to said second shaft, said differential gear engaged with said first gear and said second gear.

4. (ORIGINAL) The active vibration control system as recited in claim 3, further comprising a drive system to rotate said second shaft about said first shaft.

5. (CURRENTLY AMENDED) ~~The active vibration control system as recited in claim 1;~~  
An active vibration control system comprising:

- a first shaft defined along a first axis;
- a first gear mounted to said first shaft;
- a second gear mounted to said first shaft;
- a first mass mounted to said second gear;
- a third gear mounted to said first shaft;
- a second mass mounted to said third gear;
- a fourth gear engaged with said second gear and said third gear such that said third gear and said second gear counter-rotate; and
- a first differential assembly engaged with said first gear and said second gear to selectively adjust rotation of said first mass and said second mass relative said first gear to generate a first vibratory force output wherein said first differential assembly comprises a clutch.

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6. (CURRENTLY AMENDED) ~~The active vibration control system as recited in claim 1;~~  
An active vibration control system comprising:  
a first shaft defined along a first axis;  
a first gear mounted to said first shaft;  
a second gear mounted to said first shaft;  
a first mass mounted to said second gear;  
a third gear mounted to said first shaft;  
a second mass mounted to said third gear;  
a fourth gear engaged with said second gear and said third gear such that said third gear and  
said second gear counter-rotate; and  
a first differential assembly engaged with said first gear and said second gear to selectively  
adjust rotation of said first mass and said second mass relative said first gear to  
generate a first vibratory force output wherein said first differential assembly  
comprises a magnetorheological fluid clutch.
7. (CANCELED)
8. (CURRENTLY AMENDED) The active vibration control system as recited in claim 2,  
~~further comprising an~~ wherein said input shaft is engaged with said first gear and said fifth gear  
such that said first gear and said fifth gear counter-rotate.
9. (CURRENTLY AMENDED) The active vibration control system as recited in claim 8 1,  
wherein said input shaft is driven by a helicopter engine-to-transmission gearbox.
10. (CURRENTLY AMENDED) The active vibration control system as recited in claim 8 1,  
wherein said input shaft drives a helicopter tail rotor.

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11. (CURRENTLY AMENDED) An active vibration control system comprising:  
a helicopter transmission;  
an engine-to-transmission gearbox which drives said helicopter transmission; and  
a force generator mounted to said engine-to-transmission gearbox, said force generator mechanically driven by an input shaft rotated by said engine-to-transmission gearbox.
12. (CURRENTLY AMENDED) ~~The active vibration control system as recited in claim 11;~~  
~~wherein said force generator further comprising:~~  
~~An active vibration control system comprising:~~  
~~a helicopter transmission;~~  
~~an engine-to-transmission gearbox which drives said helicopter transmission; and~~  
~~a force generator mounted to said engine-to-transmission gearbox, said force generator driven by an input shaft rotated by said engine-to-transmission gearbox;~~  
a first shaft defined along a first axis;  
a first gear mounted to said first shaft, said first gear driven by said input shaft;  
a second gear mounted to said first shaft;  
a first mass mounted to said second gear;  
a third gear mounted to said first shaft;  
a second mass mounted to said third gear;  
a fourth gear engaged with said second gear and said third gear such that said third gear and said second gear counter-rotate; and  
a first differential assembly engaged with said first gear and said second gear to selectively adjust rotation of said first mass and said second mass relative said first gear to generate a first vibratory force output.

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13. (CURRENTLY AMENDED) ~~The active vibration control system as recited in claim 11,~~  
further comprising

An active vibration control system comprising:

a helicopter transmission;

an engine-to-transmission gearbox which drives said helicopter transmission; and

a force generator mounted to said engine-to-transmission gearbox, said force generator  
driven by an input shaft rotated by said engine-to-transmission gearbox; and

a second force generator mounted to said helicopter transmission, said second force  
generator driven by an output to a helicopter tail rotor.

14. (CURRENTLY AMENDED) An active vibration control system comprising:  
a helicopter transmission; and  
a force generator mounted to and mechanically driven by said helicopter transmission.

15. (CURRENTLY AMENDED) The active vibration control system as recited in claim 14,  
further comprising a second force generator mounted to said helicopter transmission, said second  
force generator mechanically driven by an output to a helicopter tail rotor.

16. (CURRENTLY AMENDED) The active vibration control system as recited in claim 14,  
further comprising:

an engine-to-transmission gearbox which drives said helicopter transmission; and

a second force generator mechanically driven by said engine-to-transmission gearbox.

17. (NEW) The active vibration control system as recited in claim 11, wherein said force  
generator is mechanically rotated by said input shaft.

18. (NEW) The active vibration control system as recited in claim 14, wherein said force  
generator is mechanically rotated by a shaft driven by said helicopter transmission.

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19. (NEW) The active vibration control system as recited in claim 11, wherein said force generator is directly driven by said input shaft.
20. (NEW) The active vibration control system as recited in claim 14, wherein said force generator is directly driven by a shaft driven by said helicopter transmission.
21. (NEW) The active vibration control system as recited in claim 14, further comprising a plurality of sensors located adjacent an aircraft cabin, said plurality of sensor in communication with said force generator for operation of said force generator in response thereto.
22. (NEW) The active vibration control system as recited in claim 14, wherein said force generator includes a shaft driven gearbox that is mechanically driven by a shaft rotated by said helicopter transmission.
23. (NEW) The active vibration control system as recited in claim 14, wherein said force generator includes a shaft driven gearbox that is mechanically driven by a tail rotor driveshaft rotated by said helicopter transmission.
24. (NEW) An active vibration control system comprising:  
a helicopter transmission; and  
a force generator mechanically driven by said helicopter transmission.
25. (NEW) The active vibration control system as recited in claim 24, wherein said force generator is directly driven by a shaft driven by said helicopter transmission.
26. (NEW) The active vibration control system as recited in claim 24, wherein said force generator is directly driven by a tail rotor driveshaft driven by said helicopter transmission.

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27. (NEW) The active vibration control system as recited in claim 24, wherein said force generator further comprises:

a first shaft defined along a first axis;

a first gear mounted to said first shaft;

a second gear mounted to said first shaft;

a second shaft mounted perpendicular to said first shaft, said first shaft mechanically driven by said helicopter transmission to rotate said second shaft about said first shaft; and

a differential gear mounted to said second shaft, said differential gear engaged with said first gear and said second gear to selectively adjust rotation of a first mass and a second mass relative said first gear to generate a first vibratory force output.